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## **Supplemental Material**

### **Air Pollution and Preterm Birth in the U.S. State of Georgia (2002–2006): Associations with Concentrations of 11 Ambient Air Pollutants Estimated by Combining Community Multiscale Air Quality Model (CMAQ) Simulations with Stationary Monitor Measurements**

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**Figure S1:** Georgia locations of ambient air quality monitors with observations during 2002–2008. SEARCH monitors at Jefferson St. in Atlanta and at Yorkville west of Atlanta are labeled H, indicating a comprehensive set of pollutant measurements are available at these sites.

**Figure S2:** Data fusion flow diagram for PM<sub>2.5</sub> (µg/m<sup>3</sup>) on 7/23/08. This method has been developed for fusing spatially sparse and temporally incomplete ambient monitor measurements and 12-km resolution chemical transport model (CMAQ) outputs to estimate daily ground-level air pollutant fields (manuscript under review). The data fusion approach uses spatial autocorrelation models to maximize the prediction of temporal variance and regression models to minimize annual mean and seasonal biases, providing daily estimates of spatial fields of air pollutant concentrations and uncertainties that are consistent with observations, emissions, and meteorology.

**Figure S3:** Scatterplots and Pearson correlation coefficients between land-based monitor daily measurements and daily fused CMAQ model estimates.

**Figure S4:** Boxplots of distributions of 11 pollutants by different exposure windows. T1: First trimester. T2: Second trimester. T3: Third trimester. Total: Total pregnancy. Boxes extend from the 25th to the 75th percentile, horizontal bars represent the median, whiskers extend 1.5 times the length of the interquartile range (IQR) above and below the 75th and 25th percentiles, respectively, and outliers are represented as points.

**Table S1:** Total pregnancy Pearson correlation coefficients among 11 ambient air pollutants, Georgia, U.S.A., for conceptions between 1 January 2002 and 28 February 2006.

**Table S2:** Adjusted ORs and 95% CIs for preterm birth per IQR increase in 11 ambient air pollutants in Georgia, U.S.A., for conceptions between 1 January 2002 and 28 February 2006.

**Table S3:** Stratum-specific adjusted ORs and 95% CIs for preterm birth per IQR increase in 11 ambient air pollutants in Georgia, U.S.A., for conceptions between 1 January 2002 and 28 February 2006.

**Table S4:** Sensitivity analysis of adjusted ORs for preterm birth per IQR increase in 11 ambient air pollutants throughout the entire pregnancy period for different amounts of smoothing on conception date (degrees of freedom=5, 9 and 17).<sup>a</sup>